

THE SPATIO-TEMPORAL PATTERNS OF LITERACY AND SEX RATIO OF SCHEDULED CASTE POPULATION IN JAMMU

PROVINCE (J&K): 2001-2011

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ABSTRACT

From the available literature and earlier studies on the scheduled caste population in the state of Jammu and Kashmir, it is quite obvious that the work done on this section of society with special reference to geographic perspective has not been taken so far. In other words, it remained partially untouched by geographers and other social scientists. So the facts convinced and compelled us to contribute and highlight their spatial patterns of literacy and sex ratio in Jammu province. If we talk numerically, then, in the entire population of Jammu and Kashmir, Scheduled Castes constitute a significant social group in 2001 and 2011 census. The Jammu province (study area) accounts for more than 99% of the total population of the Scheduled Castes in the state of Jammu and Kashmir. Therefore the significance of selecting this particular social group can be ascertained from this fact and also they account for 17 percent of the total population of the study area. Thus, our curiosity as geographic researcher has directed us to explore the spatio-temporal variations in sex ratio and literacy patterns of scheduled caste population.

KEYWORDS: Sex Ratio, Literacy, Scheduled Caste & Spatial Distribution

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INTRODUCTION

The Scheduled Caste section of Indian population forms the lowest segment of the Hindu caste society. Many terms have been used for scheduled castes in the past for example Shudras, Dalits, Depressed Classes, Outcastes, and Untouchables. In early nineties social reformers focused on these depressed classes and wanted a separate electorate from census of India to identify these classes and also to secure a separate place in the political system. But unfortunately the proposal was rejected and after the rejection of Dr. Ambedkar's plea for a separate electorate, the Simon Commission recommended that there shall be some reserved seats for this lower caste community in all the eight provinces. In the year 1932, the British Government announced double seats for depressed classes, one as a caste Hindu and the other as depressed class. The father of Nation, Mahatma Gandhi who acknowledged reservation of 148 seats for the depressed classes for 10 years, rejected this. The approved 148 seats for the depressed classes were incorporated in the Poona Pact and finally in the Govt. of India Act of 1935. Accordingly, a list of those communities was prepared which by reason of their specific position in Hindu social milieu suffered certain serious disadvantages. The article 341 of Indian constitution empowers the President of India to notify, after consulting the head of the concerned State, by an order the castes, tribes or races or part of or group within castes, tribes or races, to be deemed as Scheduled Castes in relation to that State. Since the study focuses on the Jammu province of J&K state only and according to the Census report of 2011 this particular social

group constitutes only 17 percent of the total population of Jammu province which includes many low ranking castes at the provincial level.

In the present study, the spatial-distribution of scheduled caste population in different tehsils of Jammu province of J&K state are studied. The significance of the selection of this social group can be ascertained from the fact that, this group accounts for 17 percent of the total population of the study area, which is very low and neglected. Thus, our curiosity as geographers has been directed towards the analysis of spatial variations in the distribution of scheduled caste population.

OBJECTIVES

The objectives of study have been confined to two most important social indicators that are sex ratio and literacy. The main objectives of the study are as follows:-

- To analyse the spatial and temporal pattern of literacy
- To study the spatial pattern of sex ratio
- To highlight inter-tehsil disparities among sex ratio and literacy
- To estimate the extent of correlation between literacy and sex ratio.

METHODOLOGY

The unit of study is at tehsil level and investigating period for this study is 2001 to 2011. The present work "Spatial patterns of literacy and sex ratio of scheduled caste population in Jammu province (J&K): 2001-2011" is primarily a census based study and is based on secondary data, collected from different published and unpublished sources like District Census Handbooks. *Software used:* The MS Office software is used for preparing and analysing of available data materials. The software used for data pre-processing and preparation, data analysis, editing and output generation is ArcGIS 10.5. Choropleth maps have been prepared to present the attributes cartographically.



Figure 1: Flow Chart, Showing the Steps in Map Making using ArcGIS 10.5.

In order to gauge the strength of the association that exists between the variables of literacy and sex ratio **Pearson correlation coefficient** has been calculated the following formula is used to calculate the Karl Pearson correlation:

$$r = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

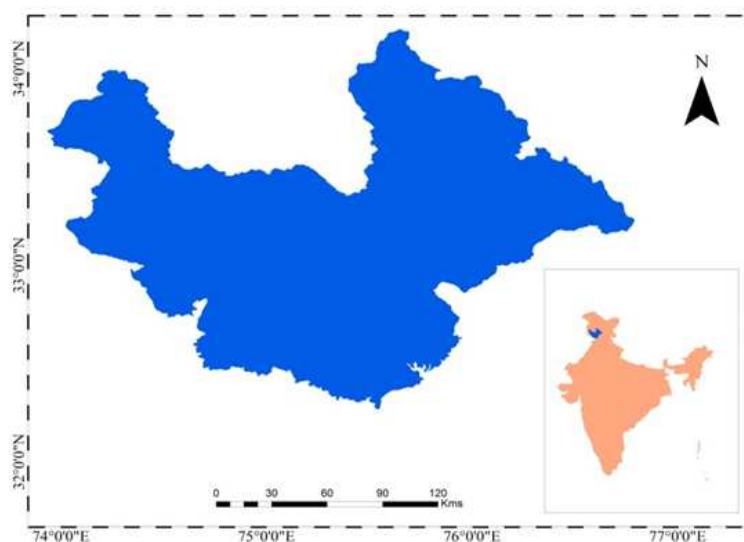
Where N = No. of pairs of scores

X = Literacy Rate

Y = Sex Ratio

LOCATION OF THE STUDY AREA

The Jammu province stretches between 32° 20' N to 33° 10' N latitude and 74° 45' E to 75° 55' E longitude. Nestled against the backdrop of the Pir Panjal Mountains, the region of Jammu constitutes the southernmost unit of the state of Jammu and Kashmir. It forms part of the transition between the Himalayan range in the north and the plains of Punjab in the south.

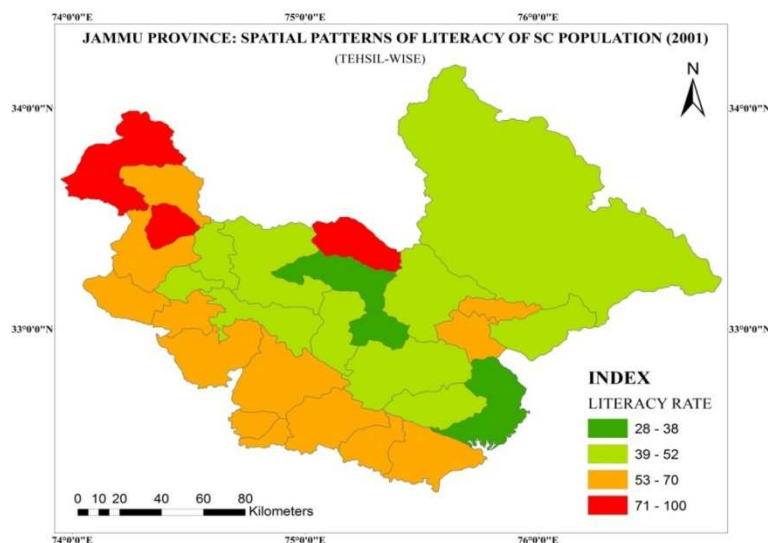


Location Map of Jammu Province

The study area covers an area of 26,293 sq km, which is 1/8th of the total area of the state. Administratively, within the actual line of control (ALC), Jammu province is divided into ten districts viz. Jammu, Kathua, Udhampur, Reasi, Ramban, Kishtwar, Samba, Doda, Rajouri and Punch. These districts are further divided into 37 tehsils.

SPATIO-TEMPORAL PATTERNS OF LITERACY

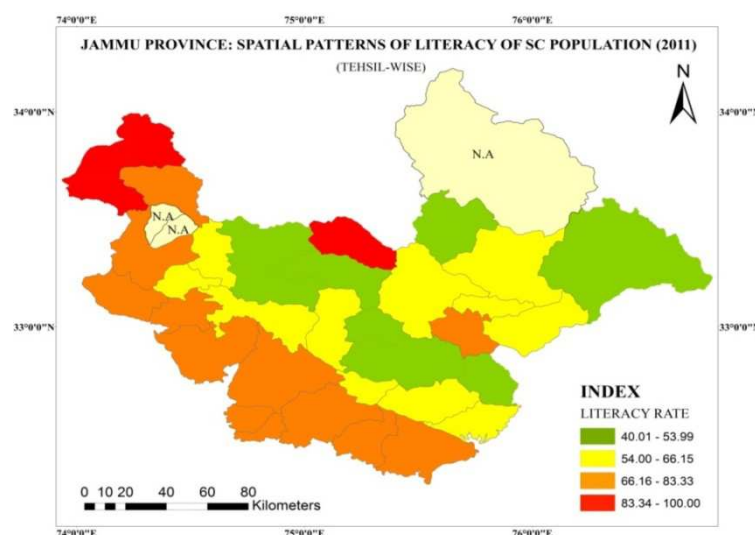
Literacy is a qualitative attribute of population which is fairly reliable index of the socio economic development of an area. The effect of Literacy is on urbanization, industrialization, communication and commerce which are vital for the development of a nation. Literacy and sex ratio are two important demographic features of the population. Literacy plays a vital role in the betterment of the sex ratio. Education across the world is a renowned element of human development. Literacy affects to various attributes of the population such as fertility, mortality, birth rate, living of standard, migration, status of women and also sex ratio. Literacy plays an important role in bringing equality in the sex ratio.



Map 1: Spatial Literacy Patterns of SC Population (2001)

According to 2001 census the overall literacy rate of scheduled caste population for Jammu province was about 59 percent that was lower than national average. Tehsil-wise literacy patterns have been shown using choropleth map. There are wide ranges of disparities in literacy pattern. The maximum literacy has been recorded in Haveli, Mendhar, Banihal and Thanamandi tehsils of Jammu region. These tehsils account for negligible share of scheduled caste population. Their high literacy does not influence the overall literacy rate of the province. The literacy rate of southwestern belt of Jammu province varies between 53 to 73 percent and these tehsils contain maximum chunk of SC population. This southwestern belt includes tehsils of Kathua, Hiranagar, Jammu, Samba, Akhnoor, Bishnah R.S. Pora and other SW tehsils of Rajouri and Poonch districts. Northwestern part of the Jammu province has very low literacy rates except few tehsils.

The inter-tehsil variation in the literacy rates, according to the 2011 census is also alarming. It varies from 100 percent in Banihal and Mandi tehsils to 48 percent in Bani tehsil of Jammu province.



Map 2: Spatial Literacy Patterns of SC Population (2011)

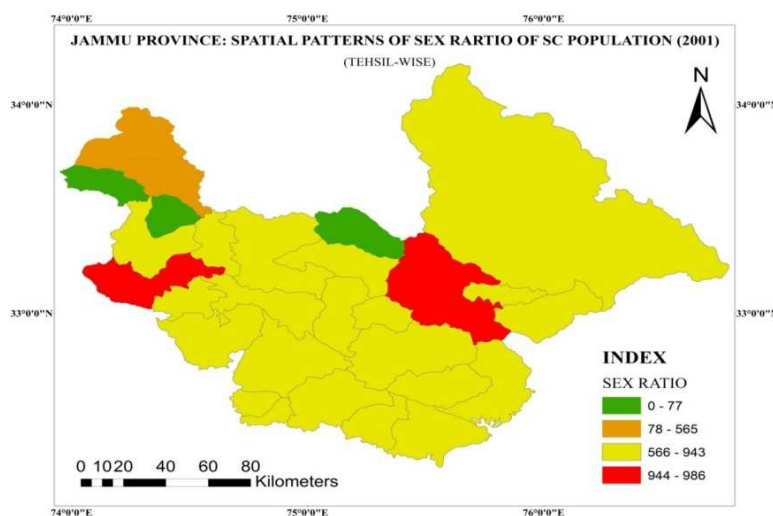
The spatio-temporal distribution of literacy pattern among the SC population in the study area is highly uneven, due to various socio- economic, political and physical factors. The educational facilities and the schemes implemented,

militancy and the terrain of the place contribute a lot to the literacy pattern of the different tehsils. The entire study area can be divided into three regions according to their literacy pattern which are as follows:-

- Tehsils with very low literacy rate (43-53): this category includes the tehsils of the hilly districts liken Paddar Chhatroo Gool Chenani Ramnagar Bani and Basholi. The inaccessibility in these tehsil is quite high due to uneven topography. Poor infrastructure, educational facilities, degraded economic conditions are the resultant factors.
- Tehsils with low literacy rate (54-66): This category includes the tehsils which are located in the periphery of the first category. Being situated in the NW part of the Jammu province the factors responsible for low literacy are same as that were listed in the above first category.
- Tehsils with high literacy rate (66-84): This zone represents the actual literacy rate of SC population as this belt accounts for major chunk of SC population. This belt being located in South and South-western part of Jammu province contain major share of urban SC population and is also industrially advanced. Moreover this belt contains the tehsils of Jammu, Kathua and Samba districts that have even topography and fertile agricultural land. Tehsils of Kathua Samba Jammu R.S.Pora, Bishnah, Akhnoor, Sunderbani, Nowshehra and Rajouri are located in this belt.
- Tehsil with very high literacy rate (above 83): Haveli, Mendhar, Mandi and Banihal are the four tehsils with literacy rate more than national average. But these tehsils have few households containing SC population and contain a negligible share of SC population.

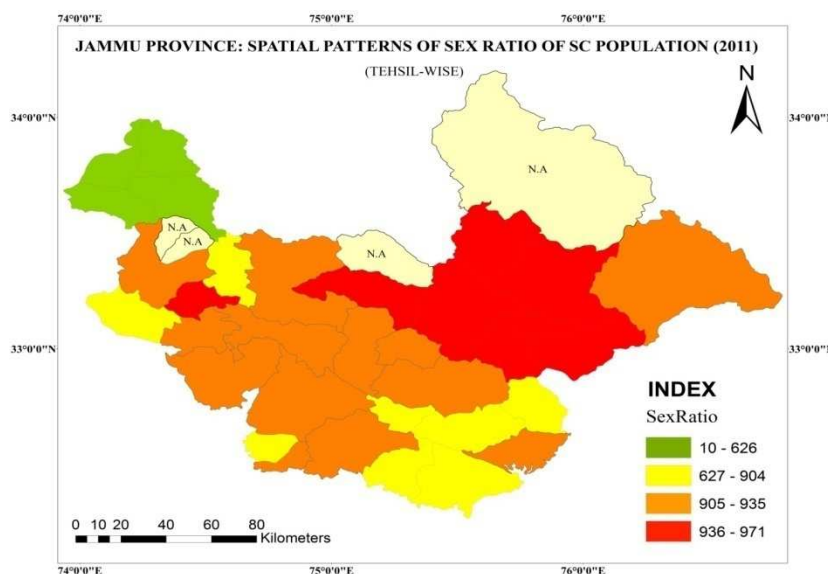
SPATIO-TEMPORAL PATTERNS OF SEX RATIO

The proportions of man and woman in the total population of a society have vital bearings in so far as it affects the labour supply through marriage and fecundity. If the proportion of the males is higher than females, more workers will be available. The excess of males tend to lower the age of marriage for females since the number of females fall short of the number of the opposite sex. The sex ratio for the Scheduled Caste population has been presented with the help of choropleth map as shown below:



Map 3: Spatial Patterns of Sex Ratio of SC Population (2001)

According to the 2001 census of Scheduled Caste population sex ratio was only 916 percent of SC population in Jammu province as compared to 933 for India. This is a very low sex ratio in most of the tehsils and it ranges from 566 to 963 as shown in the map. Out of the 30 tehsils in 2001, 23 tehsils have a sex ratio ranges from 566 to 963. It is quite worse in the tehsils of the Thanamandi, Mendhar, Haveli, Surankote, Banihal where the sex ratio is even less than 565. The tehsils of Nowshehra, Sundarbani, Doda and Bhaderwah have better sex ratio and is more than national average. The condition was same for the census year of 2011 i.e. the sex-ratio of the study area was 915 as compared to the national average i.e. 940. The inter-tehsil variation in the sex-ratio according to the 2011 census is also alarming.



Map 4: Spatial Patterns of Sex Ratio of the SC Population (2001)

Jammu province can be divided into four categories on the basis of sex ratio.

- Tehsils with very low sex ratio (less than 626): The entire Poonch district lies in this category and have worst male-female ratio but there are few households of Scheduled Caste and this district contains a very meagre proportion of the Scheduled Caste population.
- Tehsils with low sex ratio (627-935): Most of the tehsils of Kathua district, nowshehra and Budhal tehsils of Rajouri District lie in the category of a low sex ratio. The drawback like poverty, unemployment famine etc. in the far flung rural areas forced people to shift from villages to urban centres. Consequently, the number of females is relatively less.
- Tehsils with medium sex ratio (936-971): This category includes the tehsils of the SW part of the Jammu province. Most of the tehsils in this region have a lower sex ratio than the national average of 940. Since these tehsils are entirely rural and most of male population use to migrate to urban area and consequently there is medium sex ratio.
- Tehsils with high sex ratio (above 936): The tehsils of district Doda including Ramban Budhal, Chhatroo and Kishtwar have a high sex ratio as compared to the national average of 940. In the present case there are less employment opportunities for females and thus majority of Scheduled Caste people still don't allow their wife and daughter for outdoor works in factories and commercial establishments. Thus the exorbitant male selective migration to the urban centre in search of livelihood has created a higher sex ratio in these tehsils.

Better community facilities like education, running water, recreation as well as attractive urban lifestyle have induced much migration, but the problem of insufficient and costly accommodation as well as more living cost act as a deterrent for the migration of the whole family. Consequently, only earning males afford to live in urban centres, leaving their families behind in the native villages.

The factors responsible for the disequilibrium in the sex ratio of Jammu province are migration and different rate of mortality among males and females. The excess male child birth is not the important cause of male dominant population in the division but it is the difference in mortality rate of two sexes which cause a male number to rise in comparison with female numbers. The higher mortality of female compare to that of male is due to social rather biological factors. The low sex ratio in terms of females is due to the inadequacy of hospitals, medical aids and trained midwives.

CORRELATION BETWEEN SEX RATIO AND LITERACY

There is a negative correlation between sex ratio and literacy for the census of 2001 (coefficient of correlation, $\rho = -0.73$), thus there is decrease of a sex ratio as increase in literacy. As far as the census of 2011 is concerned, again, there is negative correlation between literacy and sex ratio of scheduled caste population as coefficient of correlation $\rho = -0.70$, thus the situation is same as stated above. Generally speaking, there is a positive correlation between the social indicators of sex ratio and literacy, but this does not hold well in the case of our study area.

Table 1: Decadal Variation in Sex Ratio and Literacy (2001-2011)

Tehsils	Sex Ratio	Literacy	Tehsils	Sex Ratio	Literacy
Samba	-3	11.17	Kalakote	-19	18.45
R.S.Pura	-14	8.74	Nowshehra	-63	11.4
Jammu	12	10.56	Rajouri	-25	10.68
Akhnoor	9	9.84	Sundarbani	-13	7.69
Bishnah	-31	9.7	Haveli	61	4.94
Ramnagar	5	13.72	Mender	76	-4.68
Udhampur	14	11.9	Banihal	-77	0
Reasi	-1	12.66	Thathri	7	10.57
Gool	-15	10.78	Bhaleesa	36	9.93
Chenani	6	15.6	Surankote	-465	19.04
Kishtwar	27	16.61	Thanamandi	N.A	N.A
Bhaderwah	-15	9.66	Chhatroo	N.A	N.A
Doda	-13	15.48	Majalta	N.A	N.A
Ramban	9	14.64	Mandi	N.A	N.A
Billawar	-41	13.28	Bani	N.A	N.A
Basholi	-9	21.34	Paddar	N.A	N.A
Kathua	6	11.28	Marwah	N.A	N.A
Hiranagar	-23	10.17	Darhal	N.A	N.A
Budhal	-50	18.72			

Source: Census of India, 2001 and 2011

N.A: Not Applicable (Tehsils were not created/No SC population)

The above table presents the tehsil-wise decadal change in term of sex ratio and literacy for scheduled caste population. The data for some tehsil is not applicable as they were not created in 2001 census. The sex ratio for most of the tehsils has been decreased over the previous decade. The rest of tehsils that have registered increase in sex ratio are Chenani Kathua, Thathri, Akhnoor, Ramban, Jammu, Udhampur, Kishtwar, Bhaleesa, Haveli, and Mendhar. But in contrast to sex ratio there was a tremendous increase in term of literacy rate for the entire study area except the tehsil of Mendhar. Accordingly the tehsils can be categorised as:

- Tehsils with the least decadal increase in literacy (4-11): This category includes the tehsils of Sundarbani, R.S.Pura, Bhaderwah, Bishnah, Akhnoor, Bhaleesa, Hiranagar, Jammu, Thathri, Rajouri and Gool.
- Tehsils with a medium decadal increase in literacy (11-15): This category includes the tehsils like Samba, Kathua, Nowshehra, Udhampur, Reasi, Billawar, Ramnagar and Ramban
- Tehsils with a high decadal increase in literacy (15-22): This category includes the tehsils like Doda, Chenani, Kishtwar, Kalakote, Budhal, Surankote and Basholi

FINDINGS AND RECOMMENDATIONS

Summarizing the present study it has been concluded that the tehsil wise patterns of Literacy and Sex Ratio are highly uneven. In 2001 the North-eastern tehsils of Jammu Province except tehsil Bani, the Literacy rate was below 52% and there was a high literacy rate in South-western tehsils of the study area. The situation was more or less same in 2011 but there was a significant increase in the Literacy Rate for the entire study area (Jammu Province). As far as tehsil wise sex ratio is concerned there is a low sex ratio in the South-western tehsils and high in North-western tehsils. The sex ratio, therefore shows a good amount of variation in different parts of the study area based on function, type of industries, possibilities of female employment, social tradition of people in urban centre as well as the overall sex ratio of the region in which these towns or selected. Moreover the study reveals that there is negative correlation between literacy and sex ratio. This means that both the variables – literacy and sex ratio are independent of each other. The study concluded that when sex ratio is higher, literacy has declined and when literacy is highest, the sex ratio has declined. This means in Gujarat, when a number of females per males are more, the proper focus is not given for female education. The study also reveals that when sex ratio is high, literacy is lower means more focus is given on education towards males as compared to females.

Due to uneven topography and inaccessibility the first more tasks on priority basis should be openings of new educational institutions in the north-western tehsils of the study area. Moreover, the teacher- student ratio must be maintained up to a specific threshold level. Further Government should start different programs especially in tehsils of Marwah, Kishtwar, Paddar, Ramban, Thathri, Gool and other remote tehsils. Moreover the programs and schemes like the much famous mid-day meal scheme and free distribution of school uniforms and books should reach to maximum population. Pre-Metric and Post- Metric scholarship schemes should be implemented at the best. The condition of school infrastructure like separate toilet facilities for boys and girls, drinking water, sitting arrangement, sports facilities and modern techniques of teachings should be implemented and improved. Severe caste discrimination of Scheduled Caste should be checked out which results in high school dropouts. Government should organize various awareness camps to popularize the ongoing welfare measures for improving the Scheduled Caste and Scheduled Tribe in the field of education.

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